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| 10/074,414 | 02/12/2002 | Hiroaki Endo | 450100-03779 | 7006 |

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NEW YORK, NY 10151

EXAMINER

DHARIA, PRABODH M

ART UNIT PAPER NUMBER

2673

DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,414

Applicant(s)

ENDO ET AL.

Examiner

Prabodh M Dharia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. **Status:** Receipt is acknowledged of papers submitted on June 7, 2004 under amendments, which have been placed of record in the file. Claims 1-10 are pending in this action.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because only marked copy of the abstract and claims has been received in a reply dated June 7, 2004. However, no unmarked copy of the abstract or claims were attached with response. Correction is required. See MPEP § 714.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitagishi et al. (5,537,168) in view of Takahara (6,628,355 B1).

Regarding Claim 1, Kitagishi et al. teaches a liquid crystal projector apparatus (Col. 14, Lines 55-63) which includes a liquid crystal panels (Col. 15, Line 21-23) for optically modulating light from a light source with an input signal (Col. 9, Lines 40,41, Lines 59-67) and projects the optically modulated light from said liquid crystal panels (Col. 15, Line 21-23) to display an image (Col. 14, Line 55 to Col. 15, Line 4), said a temperature sensor for detecting a temperature of each of said plurality of liquid crystal panels (Col. 15, Line 21-23) at a location in said liquid crystal projector apparatus other than said liquid crystal panels (Col. 16, Lines 38,39, Col. 15, Line 21-23, the display panel is in the same casing as lenses (Col. 19, Lines 6-20), since the temperature of the lenses would be the temperature of the casing inside, since the display panel is inside the casing it would also be the temperature of the display panel), a memory for storing temperature detection data obtained by said temperature sensor (Col. 16, 49-53) within a period from a power supply starting time to a steady operation entering time of said liquid crystal projector apparatus (Col. 15, Lines 49-55, Col. 16, Lines 38-40, Lines 49-54, Col. 2, Lines 32-34, Col. 19, Lines 22-24), arithmetic operation (calculation by controller) means for estimating a temperature of each of said plurality of liquid crystal panels (Col. 15, Line 21-23) based on the temperature detection data stored in said memory to indirectly obtain the temperature of each of said plurality of liquid crystal panels (Col. 19, Lines 65-67, Col. 15, Line 21-23) and a plurality of liquid crystal drive sections (Col. 15, Lines 21-55) for correcting a drive voltages for driving each of said

plurality of liquid crystal panels (Col. 15, Line 21-23) with an output signal of said arithmetic operation means and applying the corrected drive voltages to each of said liquid crystal panels (Col. 2, Lines 32-34, Col. 19, Lines 22-24, Col. 15, Line 21-23, Col. 15, Lines 49-55, Col. 16, Lines 38-40, Lines 49-65, Col. 19, Line 65 to Col. 20, Line 3, Col. 19, Lines 38-45, Col. 14, Line 55 to Col. 15, Line 4, Col. 9, Lines 40,41, Lines 59-67).

However, Kitagishi et al. fails to recite a temperature sensor for detecting a temperature of each of said plurality of liquid crystal panels.

However, Takahara teaches plurality of display panels temperature (Col. 102, Lines 4-17).

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate Takahara teaching in Kitagishi et al. teaching to have a driving method of the liquid crystal display panel with correcting a defect in the display and liquid crystal being employed as a projection display.

Regarding Claim 2, Kitagishi et al. teaches a liquid crystal projector apparatus (Col. 14, Lines 55-63) which includes a plurality of said liquid crystal panels (Col. 15, lines 21-23) for optically modulating light from a light source with an input signal (Col. 9, Lines 40,41, Lines 59-67)

Takahara teaches a plurality of liquid crystal drive sections controls a dc component of the drive voltage to be applied to each of said plurality of liquid crystal panel to correct the voltages (Col. 84, Line 42 to Col. 85 Line 37).

Regarding Claim 3, Takahara teaches the light source and said plurality of liquid crystal panels (Col. 84, Line 42 to Col. 85 Line 37) are disposed in a housing, and said liquid crystal projector apparatus further comprises cooling means for circulating air in said housing without taking in external air to cool said plurality of liquid crystal panels in said housing (Col. 95, Line 53, Col. 96, Lines 27-31, Col. 84, Line 42 to Col. 85 Line 37).

Regarding Claim 4, Kitagishi et al. teaches the plurality of liquid crystal panels (Col. 15, Line 21-23) include a liquid crystal panel for red, a liquid crystal panel for green and a liquid crystal panel for blue, and wherein a first liquid crystal drive sections (Col. 15, Lines 21-55) corrects drive voltage for driving said liquid crystal panel for red with an output signal of said arithmetic operation means and applies the corrected drive voltage to said liquid crystal panel for red, a second liquid crystal drive section corrects a drive voltage for driving said liquid crystal panel for green with another output signal of said arithmetic operation means and applies the corrected drive voltage to said liquid crystal panel for green, and a third liquid crystal drive section corrects a drive voltage for driving said liquid crystal panel for blue with a further output signal of said arithmetic operation means and applies the corrected drive voltage to said liquid crystal panel for blue (Col. 6, Lines 12- 67, Col. 2, Lines 32-34, Col. 19, Lines 22-24, Col. 15, Lines 49-55, Col. 16, Lines 38-40, Lines 49-65, Col. 19, Line 65 to Col. 20, Line 3, Col. 19, Lines 38-45, Col. 14, Line 55 to Col. 15, Line 4, Col. 9, Lines 40,41, Lines 59-67).

Regarding Claim 5, Kitagishi et al. teaches liquid crystal projector apparatus further comprises a room temperature detection sensor for detecting a room temperature separately from said temperature sensor, and said arithmetic operation means arithmetically operates, at the power supply starting time, a difference between the temperature detection data of said temperature sensor and room temperature detection data of said room temperature detection sensor (Col. 2, Lines 32-34, Col. 19, Lines 22-24, Col. 15, Lines 49-55, Col. 16, Lines 38-40, Lines 49-65, Col. 19, Line 65 to Col. 20, Line 3, Col. 19, Lines 38-45, Col. 14, Line 55 to Col. 15, Line 4, Col. 9, Lines 40,41, Lines 59-67, Kitagishi et al. teaches detecting temperature, which is also a room temperature and if there is deterioration in display image at room temperature, correction is made calculating and correcting voltage to drive optics of the liquid crystal panel).

Regarding Claim 6, Kitagishi et al. teaches a liquid crystal projector apparatus (Col. 14, Lines 55-63) which includes a plurality of liquid crystal panels (Col. 15, Lines 21-55) for optically modulating light from a light source with an input signal (Col. 9, Lines 40,41, Lines 59-67) and projects the optically modulated light from said plurality of liquid crystal panels (Col. 15, Lines 21-55) to display an image (Col. 14, Line 55 to Col. 15, Line 4), said driving method comprising step of detecting a temperature of each of said plurality of plurality of liquid crystal panels (Col. 15, Lines 21-55) at a location in said liquid crystal projector apparatus other than said plurality of liquid crystal panels (Col. 15, Lines 21-55, Col. 16, Lines 38,39), a memory for storing temperature detection data obtained by said temperature sensor (Col. 16, 49-53) within a period from a power supply starting time to a steady operation entering time of said liquid crystal projector

apparatus (Col. 15, Lines 49-55, Col. 16, Lines 38-40, Lines 49-54, Col. 2, Lines 32-34, Col. 19, Lines 22-24), arithmetic operation (calculation by controller) means for estimating a temperature of each of said plurality of liquid crystal panels (Col. 15, Lines 21-55) based on the temperature detection data stored in said memory to indirectly obtain the temperature of each of said plurality of liquid crystal panels (Col. 15, Lines 21-55, Col. 19, Lines 65-67, the display panel is in the same casing as lenses (Col. 19, Lines 6-20), since the temperature of the lenses would be the temperature of the casing inside, since the display panel is inside the casing it would also be the temperature of the display panel), and a plurality of liquid crystal drive sections (Col. 15, Lines 21-55) for correcting a drive voltage for driving said liquid crystal panel with an output signal of said arithmetic operation means and applying the corrected drive voltages to said plurality of liquid crystal panels (Col. 2, Lines 32-34, Col. 19, Lines 22-24, Col. 15, Lines 49-55, Col. 16, Lines 38-40, Lines 49-65, Col. 19, Line 65 to Col. 20, Line 3, Col. 19, Lines 38-45, Col. 14, Line 55 to Col. 15, Line 4, Col. 9, Lines 40,41, Lines 59-67).

However, Kitagishi et al. fails to recite a temperature sensor for detecting a temperature of each of said plurality of liquid crystal panels.

However, Takahara teaches plurality of display panels temperature (Col. 102, Lines 4-17).

Thus it is obvious to one in the ordinary skill in the art at the time of invention was made to incorporate Takahara teaching in Kitagishi et al. teaching to have a driving method of the liquid crystal display panel with correcting a defect in the display and liquid crystal being employed as a projection display.

Regarding Claim 7, Takahara teaches the plurality of liquid crystal drive sections (Col. 84, Line 42 to Col. 85 Line 37) controls a dc component of the drive voltage to be applied to said plurality of liquid crystal panels (Col. 84, Line 42 to Col. 85 Line 37) to correct the voltage (Col. 84, Lines 42-44).

Regarding Claim 8, Takahara teaches the light source and said plurality of liquid crystal panels (Col. 84, Line 42 to Col. 85 Line 37) are disposed in a housing, and cooling means circulates air in said housing without taking in external air to cool said plurality of liquid crystal panels (Col. 84, Line 42 to Col. 85 Line 37) in said housing (Col. 95, Line 53, Col. 96, Lines 27-31).

Regarding Claim 9, Kitagishi et al. teaches the plurality of liquid crystal panels (Col. 15, lines 21-23) includes a liquid crystal panel for red, a liquid crystal panel for green and a liquid crystal panel for blue, and wherein a first liquid crystal drive section corrects drive voltage for driving said liquid crystal panel for red with an output signal of said arithmetic operation means and applies the corrected drive voltage to said liquid crystal panel for red, a second liquid crystal drive section corrects a drive voltage for driving said liquid crystal panel for green with another output signal of said arithmetic operation means and applies the corrected drive voltage to said liquid crystal panel for green, and a third liquid crystal drive section corrects a drive voltage for driving said liquid crystal panel for blue with a further output signal of said arithmetic operation means and applies the corrected drive voltage to said liquid crystal panel for blue (Col. 6, Lines 12- 67, Col. 2, Lines 32-34, Col. 19, Lines 22-24, Col. 15, Lines 49-55, Col. 16,

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Lines 38-40, Lines 49-65, Col. 19, Line 65 to Col. 20, Line 3, Col. 19, Lines 38-45, Col. 14, Line 55 to Col. 15, Line 4, Col. 9, Lines 40,41, Lines 59-67).

Regarding Claim 10, Kitagishi et al. teaches liquid crystal projector apparatus further comprises a room temperature detection sensor for detecting a room temperature separately from said temperature sensor, and said arithmetic operation means arithmetically operates, at the power supply starting time, a difference between the temperature detection data of said temperature sensor and room temperature detection data of said room temperature detection sensor (Col. 2, Lines 32-34, Col. 19, Lines 22-24, Col. 15, Lines 49-55, Col. 16, Lines 38-40, Lines 49-65, Col. 19, Line 65 to Col. 20, Line 3, Col. 19, Lines 38-45, Col. 14, Line 55 to Col. 15, Line 4, Col. 9, Lines 40,41, Lines 59-67, Kitagishi et al. teaches detecting temperature, which is also a room temperature and if there is deterioration in display image at room temperature, correction is made calculating and correcting voltage to drive optics of the liquid crystal panel).

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is informed that all of the other additional cited references either anticipate or render the claims obvious. In order to not to be repetitive and exhaustive, the examiner did draft additional rejection based on those references.

Response to Arguments

7. Applicant's arguments filed 06-07-2004 have been fully considered but they are not persuasive.

Applicant argues cited references fail to teach plurality of display panels temperature.

Examiner disagrees as Kitagishi teaches the display panel is in the same casing as lenses (Col. 19, Lines 6-20), since the temperature of the lenses would be the temperature of the casing inside, since the display panel is inside the casing it would also be the temperature of the display panel. However, Takahara teaches plurality of display panels temperature (Col. 102, Lines 4-17). Since microprocessor involve in controlling of temperature measure temperature is obviously stored.

Applicant argues suggestion and expectation of success must be found in prior art; it should not be hindsight based on applicant's own success.

Examiner argues as both the references teaches projection display and correcting the defect in display due to temperature. Examiner disagrees as there is no hindsight based on applicant's own success used for motivation to combine two references. The combination do obviate.

8. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

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Applicant is notified that the prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ueyama et al. (6,467,911 B1) Projector and lamp unit.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M Dharia whose telephone number is 703-605-1231. The examiner can normally be reached on M-F 8AM to 5PM.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-3054938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

PD

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June 29, 2004

A handwritten signature in black ink, appearing to read 'Vijay Shankar', written in a cursive style.

**VIJAY SHANKAR
PRIMARY EXAMINER**